

REMARKS

Upon entry of the present amendment, claims 17-31 will have been canceled without prejudice or disclaimer, and new claims 32-37 will have been submitted for consideration by the Examiner.

In view of the herein contained amendments and remarks, Applicants respectfully request reconsideration and withdrawal of each of the outstanding rejections set forth in the above-mentioned Official Action. Such action is respectfully requested and is now believed to be to be appropriate and proper.

In the outstanding Official Action, the Examiner provisionally rejected all of pending claims 17-31 based on non-statutory double patenting over claims 1-19 of copending Application 10/704,653.

The Examiner asserted that the subject matter in the claimed application is fully disclosed in the copending application and would be covered by any patent granted on the copending application since the copending application and the present application are claiming common subject matter. In particular, the Examiner asserted that the difference between the claims in the instant application and the copending application is that the claims in the present application are broader than the claims in the copending application.

Applicants respectfully traverse the above rejection and submit that it is inappropriate. It is respectfully submitted that the differences between the claims in the present application and in the copending application are much more than as asserted by the Examiner. In particular, for example, claim 20 of the copending application recites a transmitting apparatus including a modulator, a receiver that receives feedback

information and a transmission power controller. In direct contrast, claim 32 of the present application recites a transmission apparatus including a plurality of antennas an eigenvalue calculator and an antenna controller. These features, as recited herein, are not recited in any of the claims of the copending application. Similarly, the claims of the present application do not recite the modulator, receiver and transmission power controller as defined in, for example, claim 20 of the copending application.

Accordingly, at least based on the newly submitted claims of the present application and based on the currently pending claims of the copending application, the Examiner's provisional non-statutory double-patenting rejection is submitted to be inappropriate and improper. Accordingly, reconsideration and withdrawal of the outstanding provisional double-patenting rejection is respectfully requested, in due course.

In the outstanding Official Action, the Examiner rejected claims 17-22 and 24-20 (assumed to be 30) under 35 U.S.C. § 103 as unpatentable over LING et al. (U.S. Patent No. 7,006,848) in view of MEDVEDEV et al. (U.S. Patent No. 6,862,271). Claims 23 and 31 were rejected under 35 U.S.C. § 103 as unpatentable over LING et al. and MEDVEDEV et al. further in view of ZHANG (U.S. Patent No. 6,369,758).

In view of the herein contained claims and remarks, Applicants respectfully traverse the above rejections and submit that they are inappropriate with respect to the combinations of features defined by Applicants' claims. Accordingly, reconsideration and withdrawal of each of the outstanding rejections of the claims in the present application is respectfully requested and is now believed to be appropriate and proper.

LING et al. discloses a method and apparatus for utilizing channel state information in a wireless communication system. In particular, LING et al. is directed to transmitting data from a transmitter to a receiver in a multiple-input multiple-output communication system. In particular, at the receiver, a number of signals are received by a number of antennas with the received signal from each antenna comprising a combination of one or more signals transmitted from the transmitter. Received signals are processed with a spatial, a time-space or a full CSI technique to derive channel state information indicative of the characteristics of a number of transmission channels used for data transmission. At the transmitter, the channel state information is received and data for transmission to the receiver is processed based on the received channel state information.

Furthermore, as disclosed in LING et al at column 9, line 20, the preconditioned modulation signals are generated utilizing equation 1. Based on equation 1, it is clear that a transmission antenna is controlled by weighing a transmission subchannel per modulated signal. In other words, based on the above, it is clear that LING et al. transmits a plurality of mixed modulated signals from the antenna. However, this does not comply with the requirements of Applicants' claims.

In particular, the present invention, as recited in at least claim 32, recites processing modulated signals independently so that the modulated signals are not mixed until transmitted from the antennas. In this regard, claim 32 defines a transmission apparatus that transmits modulated signals of independent channels. The transmission apparatus includes a plurality of antennas that transmit the modulated signals and an eigenvalue calculator that calculates an eigenvalue of the channel matrix

generated using the modulated signals received by the communicating party. An antenna controller selects one or more antennas transmitting the modulated signals based on the eigenvalue and outputs the determined information as a control signal. Accordingly, it is respectfully submitted that claims 32 and 33, which are directed to a communication method generally related to the transmission apparatus of claim 32, are not taught, disclosed nor rendered obvious by the disclosure of LING et al. even if modified as proposed by the Examiner.

In this regard, the Examiner has not asserted that MEDVEDEV et al. supplies or discloses the above-noted shortcomings of the LING et al. document.

By the present amendment, Applicants have submitted additional claims 34-37. In this regard, Applicants note that present claim 34 contains the substantial recitations of original claims 1 and 8. Similarly, newly submitted claim 35 contains the substantial recitations of original claims 9 and 12. Further, newly submitted claim 36 contains the substantial recitations of original claims 14 and 16.

In the first Official Action in the present application, mailed on November 16, 2005, the Examiner indicated that claims 8, 12 and 16 were merely objected to for depending on a rejected base claim, but that these features, if incorporated into respective independent claims, would be allowable. By the present response, Applicants have thus submitted claims 34, 35 and 36 which substantially correspond to original claims 8, 12 and 16 rewritten into independent form.

Accordingly, it is respectfully submitted that at least based upon the Examiner's indication in the first Official Action in the present application, these claims should also be allowable.

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Newly submitted claim 37 represents a transmission apparatus that relates to the reception apparatus recited in claim 36. Since claim 37 depends from previously indicated to be allowable claim 36, it is respectfully submitted to be allowable at least for this additional reason.

In view of the above, Applicants respectfully request reconsideration and withdrawal of each of the outstanding rejections together with an indication of the allowability of all the claims in the present application. An action to such effect is respectfully requested, in due course.

SUMMARY AND CONCLUSION

Applicants have made a sincere effort to place the present application in condition for allowance and believe that they have now done so. Applicants have, concurrently with the filing of an RCE of the present application, cancelled the existing claims and have submitted new claims for consideration by the Examiner. With respect to the newly submitted claims, Applicants have traversed the Examiner's double-patenting rejection based on the differences and distinctions between the recitations of the pending claims and the recitations of the claims of the copending application.

Applicants have further discussed the disclosure of the references relied upon in the outstanding rejection under 35 U.S.C. § 103 and have pointed out the shortcomings and deficiencies thereof. Applicants have discussed the recitations of Applicants' claims and have pointed out the distinctions thereof with respect to the disclosure of the references relied upon by the Examiner.

Applicants have further pointed out that several newly submitted claims are based upon claims objected to in the previous Official Action and should, thus, be allowable at least based upon this indication by the Examiner.

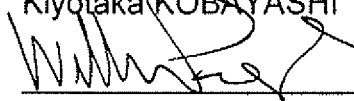
Accordingly, Applicants have provided a clear evidentiary basis supporting the patentability of all the claims in the present application and respectfully request an indication to such effect, in due course.

Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

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Should the Examiner have any questions or comments regarding this Response, or the present application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
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